

What is a Geoscientist?

Geoscientists study the Earth's resources and environment. They work to understand natural processes on Earth and other planets. Investigating the Earth, its soils, oceans, and atmosphere, forecasting the weather; developing land-use plans; exploring other planets and the solar system; determining environmental impacts; and finding new sources of useful Earth minerals are just a few of the ways geoscientists contribute to our understanding of Earth processes and history.



GEOSCIENCES CAREERS

What do Geoscientists do?

Geoscientists gather and interpret data about the Earth and other planets. They use their knowledge to increase our understanding of Earth processes and resources to improve the quality of human life. Their work and career paths vary widely because the geosciences are broad and diverse. The following list gives a glimpse of what geoscientists do in these disciplines and a variety of subdisciplines.

Atmospheric scientists study weather processes; the global dynamics of climate; solar radiation and its effects; and the role of atmospheric chemistry in ozone depletion; climate change, and pollution.

Environmental geologists study the interaction between the geosphere, hydrosphere, atmosphere, biosphere, and human activities. They work to solve problems associated with pollution, waste management, urbanization, and natural hazards, such as flooding and erosion.

Geochemists use physical and inorganic chemistry to investigate the nature and distribution of major and trace elements in ground water, and Earth materials; they use organic chemistry study the composition of fossil fuel (coal, oil, and gas) deposits.

Geophysicists apply the principles of physics to studies of the Earth's interior and investigate Earth's magnetic, electric, and gravitational fields.

Hydrologists are concerned with water from the moment of precipitation until it evaporates into the atmosphere or is discharged into the ocean; for example they study river systems to predict the impacts of flooding.

Paleontologists study fossils to understand past life forms and their changes through time and to reconstruct past environments.

Petroleum geologists are involved in exploration for and production of oil and natural-gas resources.

Structural geologists analyze rocks by studying deformation, fracturing and folding of the Earth's crust.

Seismologists study earthquakes and analyze the behavior of earthquake waves to interpret the structure of the Earth.

Job outlook

The employment outlook in the geosciences – as in any profession – varies with the economic climate of the country. The long-range outlook is good at this time. Dwindling energy, mineral, and water resources along with increasing concerns about the environment and natural hazards present new challenges in geosciences.

